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(54) Abstract Title: **Fence or gate post**

(57) A post comprises at least two elements 40, 44, 48, fixed together, so as to define a void, one or more elements being so configured and dimensioned that at least a portion of the void is visible when the post is in use, e.g. apertures 50, 52 may be provided. The apertures may have metal scrollwork therein, a lamp may be fitted in the void, and the post may be of metal such as mild steel welded or adhered together, or plastics.

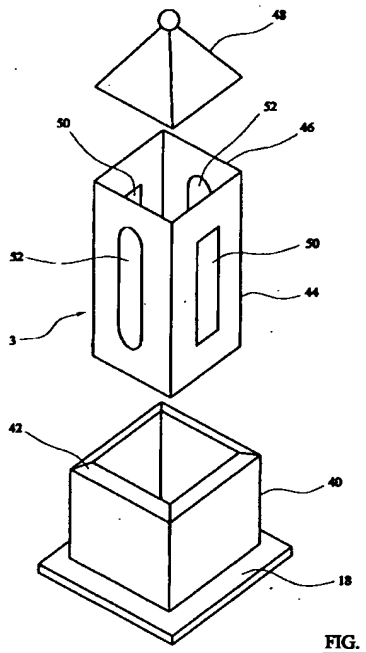

FIG. 3

plates 18 welded to post 2

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The print reflects an assignment of the application under the provisions of Section 30 of the Patents Act 1977.

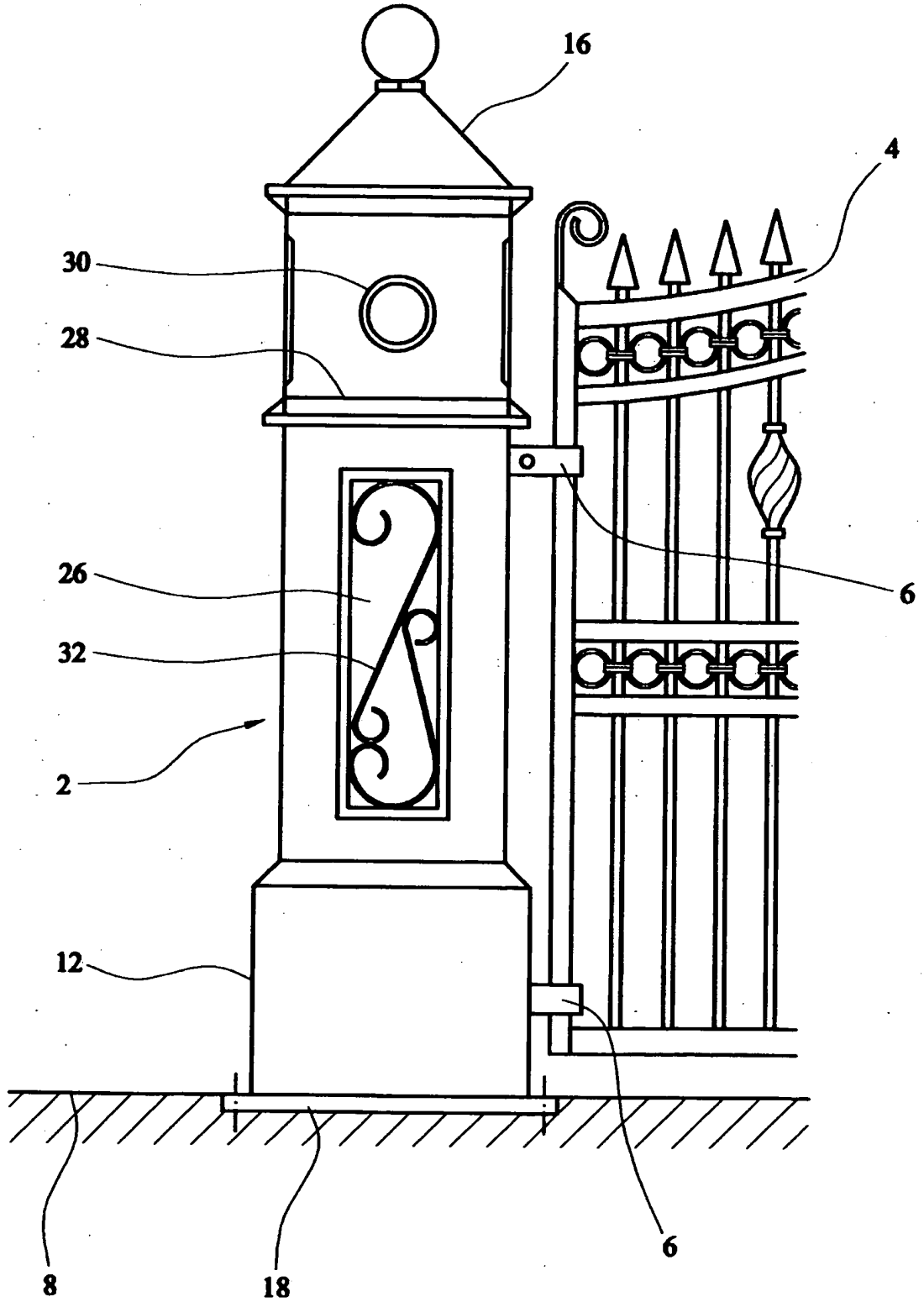

FIG. 1

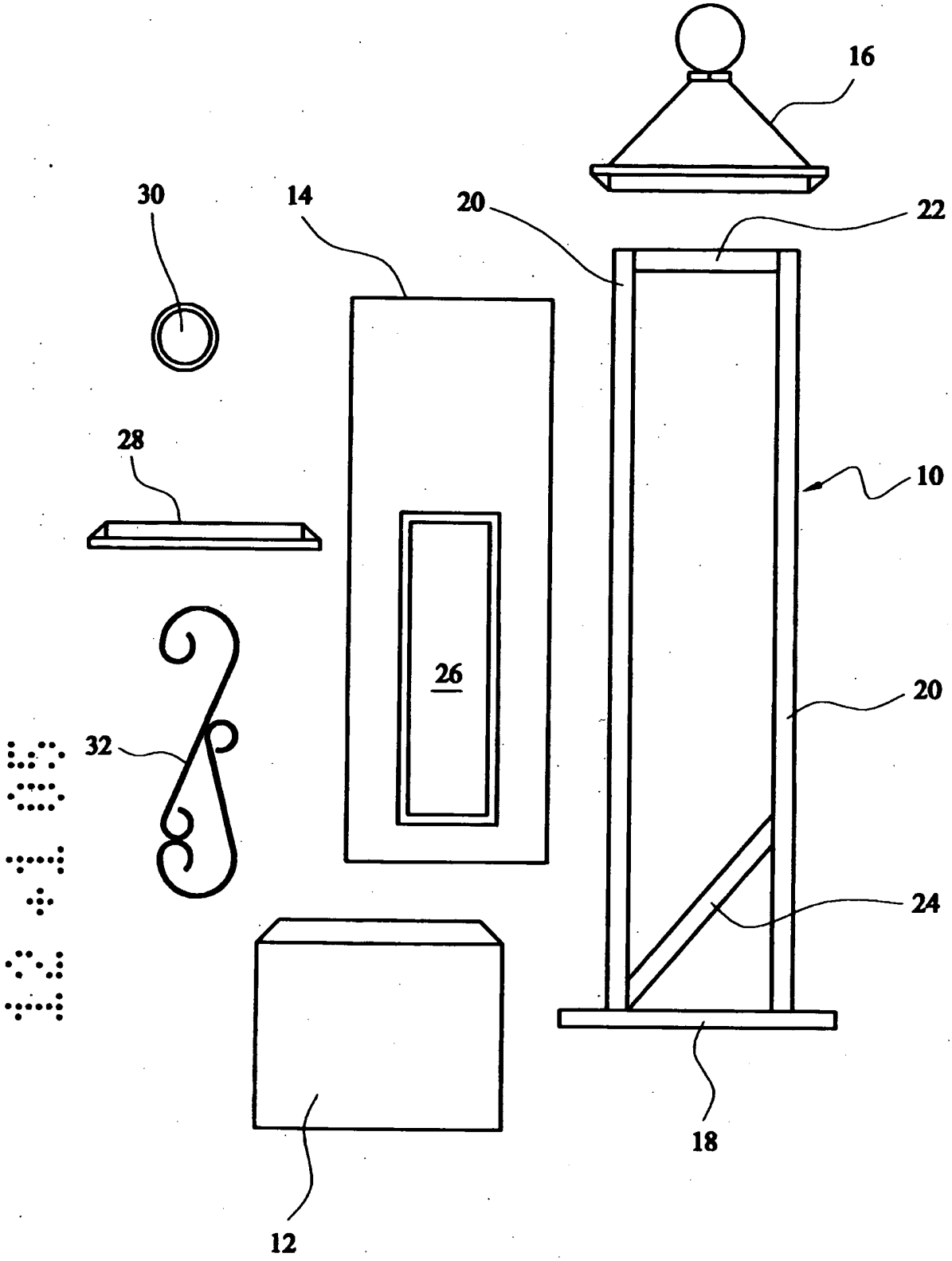

FIG. 2

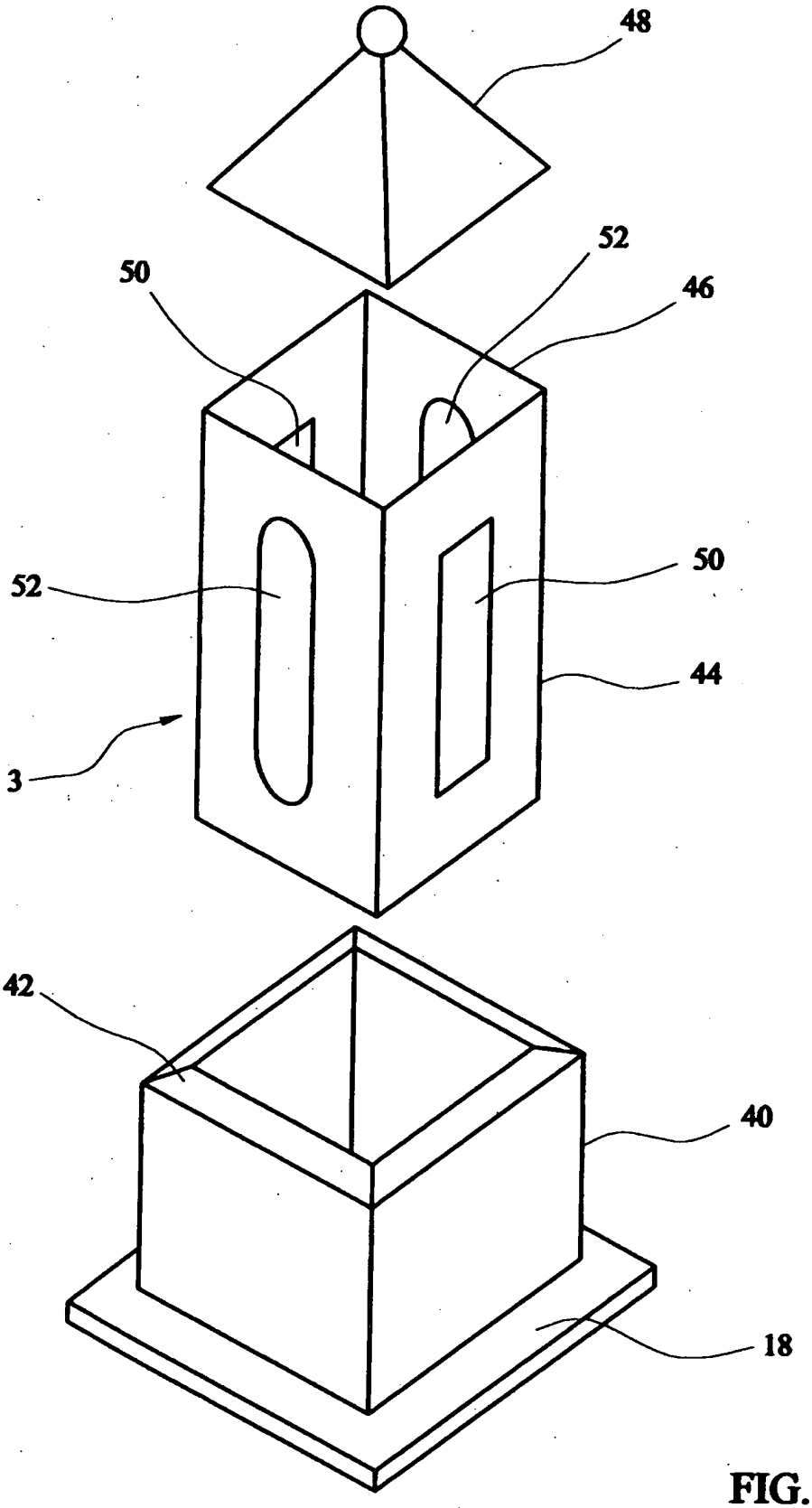

FIG. 3

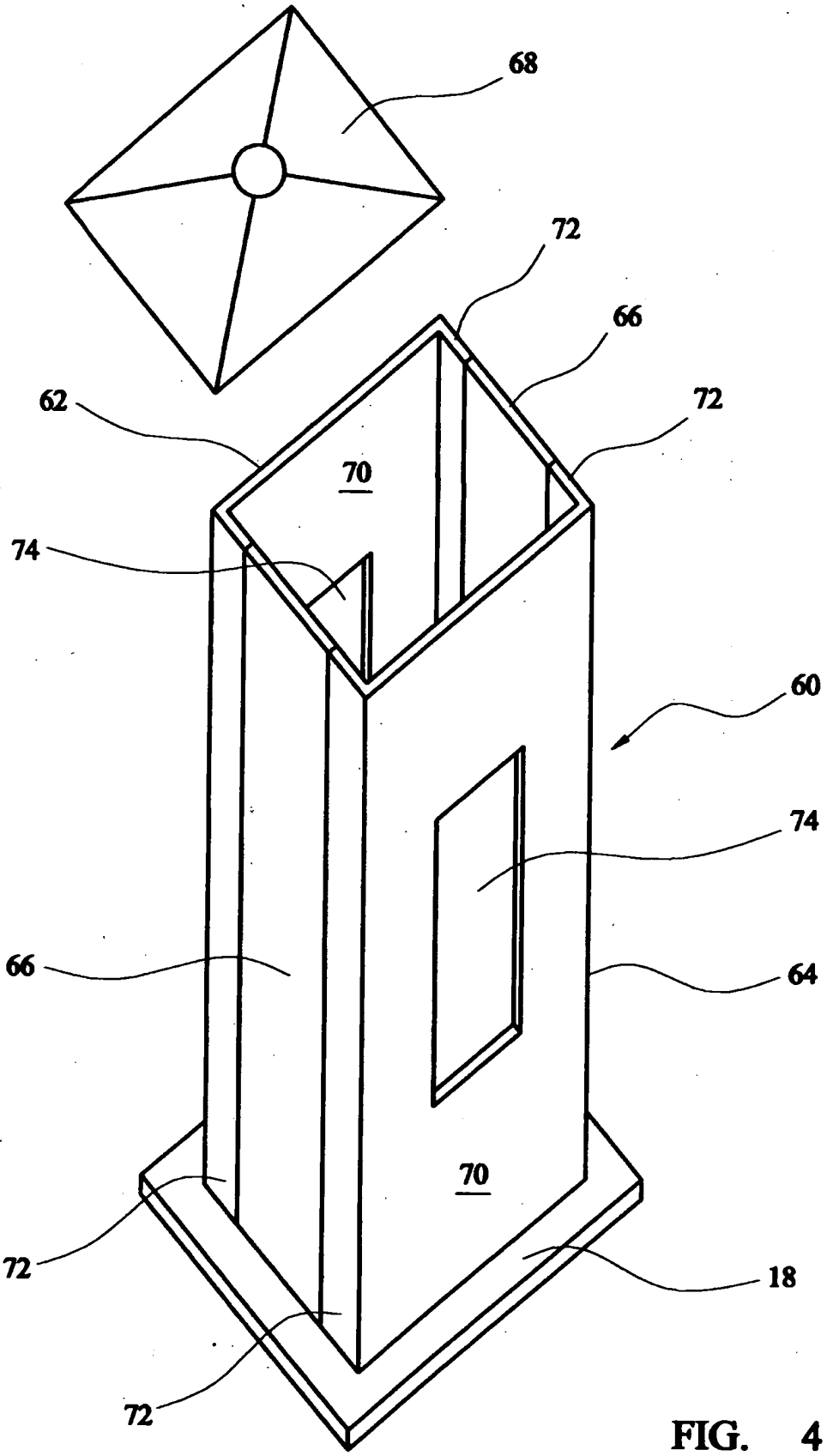

FIG. 4

Fence and gate Posts

This application relates to fence and gate posts, and in particular, to fence and gate posts of an ornate design.

Fence and gate posts are, as is well known, used in the definition of gateways, for hanging gates so that they may close a gateway, or for supporting fences or railings. Where it is desired that the fence or gate be of an ornate construction then it has been common practice to construct such fence or gate posts out of cast iron. These posts have typically either been solid in construction, or comprised of a small number, typically four, of castings bolted together.

According to the present invention there is provided a fence or gate post comprising at least two elements in which each element is rigidly fixed to at least one other element, the elements of the posts define a void when fixed to each other, and in which one or more of the elements is so configured and dimensioned that at least a portion of the void is visible when the post is in normal use.

Construction of a fence or gate post according to the present invention is particularly desirable because the aesthetics given by virtue of the post's construction are particularly pleasing by virtue of the visibility of the void. The fixing together of various elements to construct a fence or gate post has the particular advantage that, because the post is constructed of individual elements, the overall shape, dimensions and/or design of the post may be varied without incurring excessive difficulties or costs on the part of the manufacturer of the post.

In a particularly preferred embodiment of the present invention at least one of the elements of a post of the present invention defines at least one aperture through which the void is visible whilst the post is in normal use. In an alternative particularly preferred embodiment of a post of the present invention, the fixing together of at least two of the elements of the post creates an aperture through which the void is visible when the post is in normal use.

It is particularly preferred that a fence or gate post according to the present invention is provided with a number of apertures through which the void is visible. Most preferably, the apertures are so located that from at least some positions a viewer of the post will be able to see through the post via a pair of apertures. Most preferably, the pair of apertures will be located on opposite sides of the post. In a post of substantially square or rectangular cross section this is most preferably achieved by positioning of the apertures centrally in a horizontal direction in opposing faces of the post. In a substantially circular cross section of the post the void would be diametrically opposite each other.

A further preferred embodiment of the present invention includes the positioning of at least one item of ornamentation within at least one of the apertures. Particularly preferred forms of ornamentation may be so called scroll work or decorative castings. Alternatively, a light transmitting material such as PERSPEX (registered trade mark) or glass may be employed. It will be appreciated that each aperture in the post may be regarded as a frame within which any appropriate ornamentation may be positioned. In a particularly preferred embodiment of the present invention the edges of the element or elements defining the aperture may be configured and dimensioned so as to render the positioning of ornamentation within the aperture relatively easy. This has a particular advantage in that posts may be fabricated in a standard fashion and then individualised by way of addition of a particular ornamentation.

In a further preferred embodiment of the present invention one of the elements of the fence or gate post is comprised of a rigid frame. In a particularly preferred embodiment, the rigid frame is comprised of a skeleton of bar having an "L" shaped cross section, frequently known as angle iron. In this embodiment it is most preferable that the rigid frame is of sufficient strength and rigidity to support/resist the expected loading on the fence or gate post. It is most preferred in this embodiment that the other elements of the post are sheet materials which are fixed to and supported by the frame. This has a particular advantage in that the elements of sheet material fixed to the frame do not have to be sufficiently strong or rigid enough to resist the loading that the post is expected to resist which leads to the advantage of savings in terms of cost, quantity of material used, and the weight of the post. The weight of the post is particularly important because, clearly, the heavier the post the greater the difficulty in handling the post when putting it into position.

In alternative preferred embodiment of the present invention each or at least some of the elements of the post are comprised of lengths of a material with a hollow cross section. The most preferred cross sectional shapes are circles, squares, or rectangles. In such an embodiment apertures through which the void may be viewed may be formed in the or each element by cutting appropriately shaped holes in the/a wall of the element.

According to a further embodiment of the present invention, the fence or gate post may further comprise at least one mounting means adapted to engage with a gate or with a fence. Where the mounting means is adapted to engage with a gate, the mounting means may form half of a hinge, the other half of which is fixed to the gate. Where the mounting means is adapted to engage with a fence or railings, the mounting means may be of configuration appropriate to the type of fence or railings intended to be mounted on the pillar.

It is most preferred that the elements of the present invention are made out of mild steel. Other preferred materials for the elements are rolled or drawn metals, or appropriate plastics or composite materials.

A particular advantage of the fence or gate post according to the present invention is that because the fence or gate post is fabricated from a number of separate elements, the design, and/or dimensions of the fence and gate post can be changed or varied relatively easily without substantial costs. This is in particular contrast to the known methods of construction of cast iron fence or gate posts where, because the fence or gate posts were made of castings, a change in design or dimension required the design and preparation of new moulds or patterns for the castings. Thus any change in design involved substantial expense and time on the part of the manufacturer. The ability to alter the design and dimensions of a fence or gate post is regularly required when as is frequently the case, the fence or gate to be mounted on the post is already in existence at the time of manufacture of the post. In such a situation, the post has to be manufactured so as to engage with the fence or gate.

A further advantage of the present invention is that it is well known that cast iron is a material which is difficult to weld in a satisfactory fashion. In particular, it is difficult to create welds of sufficient strength to resist the stresses expected to be experienced by the post. Furthermore, welding cast iron is likely to give rise to defects in the structure of the material, which may lead to structural failure of the post. These disadvantages are overcome when the elements of the post of the present invention is made from material better suited to welding such as, most preferably, mild steel.

Further advantages of a post according to the present invention over a cast iron post, particularly where the elements of the post are made of mild steel or other equivalent rolled or drawn metal, are:

1) because of the greater elasticity of drawn or rolled metals than cast iron a post may be made from less material than a cast iron post for a comparable strength;
2) a post is less likely to be damaged in transit to the point of use;
3) a post will be more resistant to impacts from, for example a vehicle;
4) a post will be easier to repair whilst in normal use; and
5) a post may be efficiently treated to prevent corrosion, for example by hot dip galvanizing.

A further advantage of the present invention is that because of the nature of the materials that may be used to construct the post of the present invention the inside faces of the elements defining a void, which will be visible by virtue of a viewers ability to see the void, maybe of surface finish as good as the surface finish of the outer face of the post without the necessity of undue work. This is not the case where the post of the present invention is cast because if the castings are sheets of cast metal then it is likely that the face that is uppermost or open to the air in the casting will not have such a good surface finish as the face that is intended to be on the outside of the post. A good surface finish can be obtained by virtue of grinding but such grinding obviously substantially increases cost of manufacture.

The present invention will be further described and explained with reference to the accompanying drawings in which:

Figure 1 shows a side view of a first embodiment of a gate post according to the present invention, the other sides substantially correspond;

Figure 2 shows an exploded view of the gate post of Figure 1;

Figure 3 shows an exploded view of a second embodiment of a gate post according to the present invention; and

Figure 4 shows an exploded view of a third embodiment of a gate post according to the present invention.

With reference to Figure 1, a gate post (2) supports a gate (4) via hinges (6). The gate post (2) is mounted on the ground (8) via a ground plate (18).

With reference to Figures 1 and 2, one side of the gate post (2) is comprised of a number of elements which are a rigid frame (10), a plinth element (12), a column element (14), and a cap element (16). The other sides of the gate post (2) substantially correspond in terms of construction.

The rigid frame (10) is rigidly attached to a ground plate (18) via conventional means. Such conventional means are most preferably welding or by nut and bolt. The ground plate (18) is used to attach the gate post (2) to the ground (8) via ground anchors (not shown). The rigid frame (10) is comprised of uprights (20), a cross bar (22) and a bracing bar (24). The elements of the rigid frame (10) are most preferably formed from bars of an "L" shaped cross section. The joints between the uprights (20) and the cross bar (22) and the uprights (20) and the bracing bar (24) are all preferably welded, although they may be any other rigid fixing means deemed appropriate.

Fixed to the uprights (20) of rigid frame (10) are the plinth portion (12) and the column portion (14). Most preferably the attachment of the plinth portion (12) and the column portion (14) to the uprights (20) is by way of welding. Again, however, other appropriate fixing means may be employed. Most preferably the fixing between the rigid frame (10) and plinth and column portions (12,14) will be rigid fixing means so as to increase the rigidity of the post (2). Cap portion (16) is, again, preferably rigidly attached to the rigid frame (10), preferably by way of attachment to cross bar (22).

The column portion (14) defines an aperture (26). The aperture (26) is formed by cutting out an appropriately shaped hole the column portion (14). To render the post more ornamental, a collar bar (28) and a roundel (30) are affixed to the column portion (14). Positioned in aperture (26) is a piece of wrought iron scroll work (32). Scroll work (32) is attached to the edge of the column portion (14) defining the aperture (26). Attachment of the collar bar (28), the roundel (30) and the scroll work (32) to the column portion (14) is most preferably by way of welding or other adhesive.

With reference to Figure 3, a gate post (3) is comprised of a first and second lengths (40 and 44) of a hollow square cross sectioned material, known as lengths of box section, a collar (42) and a cap portion (48).

The first length of box section (40) is fixed to a base plate (18) by a rigid fixing means. Most preferably the fixing means is welding but other rigid fixing means such as nuts, bolts and flanges may be employed. Fixed to the edge of box section (40) remote from the ground plate (18) is collar (42). Collar (42) is configured to slope inwardly from each face of the box section (40). The edge of collar (42) remote from the box section (40) is of appropriate dimensions to abut and be rigidly fixed to the lower edge of the second box section (44). Rigidly fixed to the upper edge (46) of box section (44) is the cap unit (48).

Suitable shapes are cut out of the faces of the second box section (44) to create apertures (50 and 52). As with the gate post (2) of Figures 1 and 2, ornamentation may be positioned within the apertures (50 and 52) should that be desired. Mountings (not shown) for a gate and/or a fence may be fixed to the gate post (3) as desired. Most preferably, in connection

with the gate post shown in Figure 3, each of the first box section (40), collar (42) and the second box section (44) are of sufficiently heavy gauge material, such as 10mm thick mild steel, to give the post sufficient rigidity that it does not require an internal rigid frame.

With reference to Figure 4, a gate post (60) is comprised of first and second channels (62 and 64), a pair of side plates (66), and a cap portion (68).

First and second channels (62 and 64) are substantially "U" shaped with a substantially flat middle portion (70) extending between the two side walls (72). The channels (62 and 64) are so positioned that the middle portions (70) of the channels form opposite faces of the post (60) and the side walls (72) of each channel extend toward the side walls (72) of the other channel. Extending between the free edges of each pair of opposing side walls (72) is a side plate (66). The abutting edges of the side walls (72) and side plates (66) are welded to each other. In an alternative embodiment, the side walls (72) are so dimensioned in a direction perpendicular to the face of the middle portion (70) that the free edges of the opposing side walls (72) abut and are welded to each other. In this embodiment side plates (66) are not required.

A first end of the composite structure comprising the first and second channels (62 and 64) and the side plates (66) is fixed to ground plate (18) by welding or other fixing means. The cap portion (68) is welded to the second end of the composite structure.

Suitable shapes are cut out of the middle portions (70) to create apertures (74). As with the gate post (2) of Figures 1 and 2, ornamentation may be positioned within the apertures (74) should that be desired. Mountings (not shown) for a gate and/or a fence may be fixed to the gate post (60) as desired. Most preferably, in connection with the gate post shown in Figure 4, each of the first and second channels (62 and 64) and side plates (66) are of sufficiently heavy gauge material, such as 10mm thick mild steel, to give the post sufficient rigidity that it does not require an internal rigid frame.

In a particular embodiment of the gate post of the present invention lighting means may be fitted in the void, most preferably at a position not directly visible from outside of the gate

post, so that, in times of darkness, the lighting means may be turned on and the void within the post illuminated. This will cause light to stream out of the or each aperture so creating a pleasant visual effect. In an alternative embodiment, security equipment, such as motion detectors, close circuit television cameras, or other appropriate security equipment may be located or hidden within the void inside the post.

Claims

1. A fence or gate post comprising at least two elements, in which each element is fixed to at least one other element, the elements of the post define a void when fixed to each other, and in which one or more of the elements is so configured and dimensioned that at least a portion of the void is visible when the post is in normal use.

2. A fence or gate post according to claim 1 in which each of at least one of the elements defines at least one aperture through which the void is visible in normal use.

3. A fence or gate post according to claim 1 in which at least one aperture through which the void is visible in normal use is created by the fixing of at least two of the elements to each other or to other elements.

4. A fence or gate post according to claim 2 or 3 in which at least one item of ornamentation is positioned within at least one of the apertures.

5. A fence or gate post according to any of claims 1 to 4 in which one of the elements is a rigid frame.

6. A fence or gate post according to any of claims 1 to 5 in which at least one of the elements is of a sheet material.

7. A fence or gate post according to any of claims 1 to 6 in which at least one of the elements is comprised a length of one of a tubular, square, rectangular or other hollow sectional material.

8. A fence or gate post according to any of claims 1 to 7 in which the method of fixing each element to each other is welding.

9. A fence or gate post according to any of claims 1 to 8 which further comprises at least one mounting means adapted to engage with a gate.

10. A fence or gate post according to any of claims 1 to 9 which further comprises at least one mounting means adapted to engage with a fence.

11. A fence or gate post according to any of claims 1 to 10 in which a majority of the elements of the post are comprised of a rolled or drawn metal.

12. A fence or gate post according to any of claims 1 to 11 in which a majority of the elements of the post are comprised of mild steel

13. A fence or gate post according to any of claims 1 to 10 in which a majority of the elements of the post are comprised of a plastics or other man made structural material.

Application No: GB0324103.1 **Examiner:** J D Cantrell

Claims searched: 1 - 13 **Date of search:** 15 February 2005

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1,7,8,12	GB2237589 A OVINGTON (Figs)
X	1, 2, 6, 7, 10, 13	JP2003257212 A DAINICHI (e.g. Fig 2, transparent plate 41)
X	1, 3, 4, 5, 7, 9 - 11	JP2001311327 A TATEYAMA (e.g. Fig 4)

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC[X] :

E1D

Worldwide search of patent documents classified in the following areas of the IPC[07]

E04H

The following online and other databases have been used in the preparation of this search report

ONLINE: EPODOC, PAJ, WPI